

PCT/FR98/00543

REPLY TO THE FIRST WRITTEN OPINION

CLAIMS

1. Implant for osteosynthesis device particularly of the backbone, comprising a bone anchoring device (1) topped by a fixing head (3) constituted by two lateral branches (5) forming an open U and designed to receive a linking rod (6) with a view to immobilization thereof by clamping, via a threaded nut (6) adapted to screw on corresponding threaded parts produced on the partially cylindrical outer walls (5a) of the lateral branches of the fixing head (3), characterized in that the nut (6) comprises, in its diametral zone, a plate (8) mounted in free rotation.
2. Implant for osteosynthesis device according to Claim 1, characterized in that the width (L) of the plate (8) is adapted to allow the slide of said plate between the branches (5) of the fixing head, defining two lateral clearances (9) on either side of said plate (8) in order to allow passage of the branches (5) of the U inside the nut (6) and the insertion of two pins (11) of an auxiliary tool (10) for gripping the nut (6) in order to facilitate assembly thereof on the fixing head (3).
3. Implant for osteosynthesis device according to one of Claims 1 or 2, characterized in that the fixing head (3) comprises two grooves (12) made opposite on the inner walls (5b) of the U-shaped branches (5) in order to ensure, after assembly of the rod (4), the guiding of pins (11) of a tool (10) on the fixing head (3) and a blind indexing of the plate (8) between the U-shaped branches (5) of said head (3), before and during clamping of the nut (6) which supports it, via the same tool (10).
4. Implant for osteosynthesis device according to Claim 3, characterized in that the plate (8) comprises, on its lateral edges (8a), two notches (13) defining, in complement and in cooperation with the guiding grooves (12) of the U-shaped branches (5) of the fixing head (3), housings (12/13) intended for the introduction and positioning of pins (11) of a tool (10).
5. Implant for osteosynthesis device according to Claim 4, characterized in that the notches (13) form, in the edges (8a) of the plate (8), quadrangular baffles intended for housing the extensions (14) of the pins (11) of a tool (10).

PCT/FR98/00543

REPLY TO THE FIRST WRITTEN OPINION

6. Implant for osteosynthesis device according to one of Claims 4 or 5, characterized in
5 that the surface (8b) of the plate (8) is concave and congruent of the surface of the cylindrical
rod (4) and knurled for a better adherence on said rod (4).

7. Tool for setting the implant for osteosynthesis device according to one of the preceding
Claims, characterized in that it is constituted by a cylindrical sleeve (16) comprising an end
part (17) forming a female hexagonal endpiece (18), on the one hand, adapted to cooperate
10 with the nut (6) of the implant and, on the other hand, into which opens out a bore (19)
intended for axial slide of a sliding member (20) and in that said sliding member (20) comprises
an emerging end (21) constituted by two partially cylindrical lateral branches (22) forming an
open U and of which the outer walls (24) are threaded so as to allow screwing of the nut (6)
on the tool, while allowing free slide of the plate (8) of said nut (6) between the threaded
15 branches (22) of the tool (10), so that the nut (6), previously screwed on the branches (22) of
the tool (10) can, after its positioning on the fixing head (13) via its pins (11) in the grooves
(12) of the U-shaped branches (5) of said head (3), be transferred directly from the threading
(24) of the tool (10) to the threading (5a) of the head (3) via the hexagonal endpiece (18)
actuated in rotation by the operator, while immobilizing the sliding member (20) likewise by
20 rotation.